REMARKS

The present application was filed on November 13, 2000 with claims 1 through 23. Claims 1 through 23 are presently pending in the above-identified patent application. Claims 12, 15, 21, and 22 are proposed to be amended herein.

In the Office Action, the Examiner objected to the abstract due to an indicated informality and rejected claims 12-15 and 21-22 under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. The Examiner also rejected claims 1-5 and 7-17 under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. The Examiner rejected claims 18 and 23 under 35 U.S.C. §102(b) as being anticipated by Adams et al. (United States Patent Number 5,274,561), rejected claims 1-11, 15-17, and 19-22 under 35 U.S.C. §103(a) as being unpatentable over Adams, rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over Adams in view of Walter C. Jones, "Collectors Picking Up the Cent Pennies Are Getting to be in Real Demand," Florida Times, Jacksonville, August 3, 1999, rejected claims 12-14 under 35 U.S.C. §103(a) as being unpatentable over Adams in view of Raymond J. Barber, Jr., "Does Your Accounting Make Cents?," National Association of Cost Accounting, 1947. The Examiner also issued a Requirement for Information under 37 CFR 1.105.

The present invention is directed to a method and apparatus for facilitating coinless transactions by rounding a fractional transaction cost up or down to a whole-unit amount. A fractional transaction cost is rounded up or down to a whole-unit amount based on a generated random number that ensures fairness to both buyers and sellers, over time. If a transaction purchase price is N.C units, where N is any non-negative integer and C is an integer between 0 and 99 indicating the fractional cost between 0 and .99, then a buyer will be charged N+1 units with a probability of p equal to C/100, and N units with a probability of 1-p.

Formal Objections

The Abstract was objected to because the term p in line 9 should be C.

The Abstract has been amended in accordance with the Examiner's suggestion and Applicant respectfully requests that the objection to the Abstract be withdrawn.

Section 101 Rejections

Claims 1-5 and 7-17 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. In particular, the Examiner asserts that claims 1-5 and 7-17 have no connection to the technological arts and none of the steps indicate any connection to a computer or technology.

The Supreme Court has stated that the "[t]ransformation and reduction of an article 'to a different state or thing' is the clue to patentability of a process claim." *Gottshalk v. Benson*, 409 U.S. 63, 70, 175 U.S.P.Q. (BNA) 676 (1972). In other words, claims that require some kind of transformation of subject matter, which has been held to include intangible subject matter, such as data or signals, that are representative of or constitute physical activity or objects have been held to comply with Section 101. *See, for example, In re Warmerdam,* 31 U.S.P.Q.2d (BNA) 1754, 1759 n.5 (Fed. Cir. 1994) or *In re Schrader*, 22 F.3d 290, 295, 30 U.S.P.Q.2d (BNA) 1455, 1459 n.12 (Fed. Cir. 1994).

Thus, as expressly set forth in each of the independent claims, the claimed methods or system describe a transaction processor that transforms a purchase price up or down to a new whole-unit amount that is a *fair amount* for executing the transaction. This transformation to a *fair* whole-unit amount provides a useful, concrete and tangible result.

Applicant submits that each of the claims 1-23 are in full compliance with 35 U.S.C. §101, and accordingly, respectfully requests that the rejection under 35 U.S.C. §101 be withdrawn.

Section 112 Rejections

Claims 12-15 and 21-22 were rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. In particular, the Examiner asserts that there is a discrepancy in the definitions of the fractional cost and probability p, and that N.C should be clearly defined.

Claims 12, 15, and 21 have been amended to correct the discrepancy in the definitions of the fractional cost and probability p, and to more clearly define N.C.

Applicant respectfully requests that the rejections of the cited claims under section 112 be withdrawn.

Independent Claims 1, 12, 15, 18, and 23

Independent claims 18 and 23 were rejected under 35 U.S.C. §102(b) as being anticipated by Adams et al., independent claims 1 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adams, and independent claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over Adams in view of Raymond J. Barber, Jr.

Regarding claim 1, the Examiner asserts that Adams teaches rounding said purchase price up or down to a whole-unit amount based on said random number.

Applicant notes that Adams is directed to rounding-off a taxi fare to include, for instance, a tip or gratuity (col. 1, lines 50-59). Thus, the prior art is directed to rounding-off a fare for the purpose of including a tip and the present invention is directed to rounding-off a purchase price to an amount that makes the transaction easier to execute. In addition, Adams teaches that the amount of the round-off (the tip) is determined by the client. Independent claims 1, 18, and 23 require rounding said purchase price up or down to a whole-unit amount *based on said random number*, independent claim 12, as amended, requires rounding said purchase price up to a price of N+1 units with a *probability of p* and down to a price of N units with a probability of (1-p), *wherein probability p equals C/100*, and independent claim 15, as amended, requires rounding said purchase price up to a price of X units with a *probability of ((N + p) / X)* and down to a price of zero units with a probability of 1 - ((N + p) / X), *wherein probability p equals C/100.* The rounding-off of the purchase price in the present invention is based on a random number or probability, ***not*** an amount chosen by a client. The basis used for rounding-off the purchase price is critical to the proper operation of the invention, and it is critical in the present invention that the client (purchaser) does ***not*** choose the amount of the round-off, as the amount of the round-off must be fair to both the purchaser and seller.

Thus, Adams does not disclose or suggest rounding said purchase price up or down to a whole-unit amount based on said random number, as required by independent claims 1, 18, and 23, does not disclose or suggest rounding said purchase

price up to a price of N+1 units with a probability of p and down to a price of N units with a probability of (1-p), wherein probability p equals C/100, as required by independent claim 12, as amended, and does not disclose or suggest rounding said purchase price up to a price of X units with a probability of ((N + p) / X) and down to a price of zero units with a probability of 1 - ((N + p) / X), wherein probability p equals C/100, as required by independent claim 15, as amended.

Additional Cited References

Jones was also cited by the Examiner for its disclosure of obtaining a buyer commitment to a transaction. Applicant notes that Jones is directed to collecting pennies. Jones does not address the issue of rounding a purchase price based on a random number or probability p.

Thus, Jones does not disclose or suggest rounding said purchase price up or down to a whole-unit amount based on said random number, as required by independent claims 1, 18, and 23, does not disclose or suggest rounding said purchase price up to a price of N+1 units with a probability of p and down to a price of N units with a probability of (1-p), wherein probability p equals C/100, as required by independent claim 12, as amended, and does not disclose or suggest rounding said purchase price up to a price of X units with a probability of ((N + p) / X) and down to a price of zero units with a probability of 1 - ((N + p) / X), wherein probability p equals C/100, as required by independent claim 15, as amended.

Barber, Jr. was also cited by the Examiner for its disclosure of "rounding purchase price to N+1 and N (nearest dollar)." Applicant notes that Barber is directed to a discussion of the value of converting currency amounts to the nearest dollar in the practice of accounting. Barber does not address the issue of rounding a purchase price based on a random number or probability p.

Thus, Barber, Jr. does not disclose or suggest rounding said purchase price up or down to a whole-unit amount based on said random number, as required by independent claims 1, 18, and 23, does not disclose or suggest rounding said purchase price up to a price of N+1 units with a probability of p and down to a price of N units with a probability of (1-p), wherein probability p equals C/100, as required by independent claim 12, as amended, and does not disclose or suggest rounding said

purchase price up to a price of X units with a probability of ((N + p) / X) and down to a price of zero units with a probability of 1 - ((N + p) / X), wherein probability p equals C/100, as required by independent claim 15, as amended.

Dependent Claims 2-11, 13-14, 16-17 and 19-22

Dependent claims 2-11, 16-17, and 19-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adams, claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Adams in view of Walter C. Jones, and claims 13-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Adams in view of Raymond J. Barber.

Claims 2-11, 13-14, 16-17 and 19-22 are dependent on claims 1, 12, 15, and 18, respectively, and are therefore patentably distinguished over Adams, Jones, and Barber, Jr., alone or in any combination, because of their dependency from amended independent claims 1, 12, 15, and 18 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

Requirement for Information under 37 CFR 1.105

The Examiner has requested that information be provided describing where a cited formula is derived from and, further, how you round off (N+p) = 3.5 and X=5, and (N+p) = 2.5 and X=5.

The advertised Purchase Price is N.C., p = C/100. In a probabilistic game of this sort, one considers the game to be "fair" if the expected purchase price is equal to the actual purchase price if one chooses not to play the game.

For a discrete random variable Z taking the value Z_1 with probability q and Z_2 with probability 1-q, and denoting the expected value of Z by E(Z) we have

$$E(Z) = p\,Z_1 + (1-p)\,Z_2.$$

This fundamental equation is discussed in introductory books on probability or statistics (see, for example, "An Introduction to Probability Theory and Its Applications," Volume 1, by William Feller, Princeton University, John Wiley & Sons, Inc., NY, 1968: p. 221 or "Probability and Statistics," 2nd Edition, by Morris H. DeGroot, Carnegie-Mellon University, Addison-Wesley Publishing Co., MA, 1989: p. 179).

In the case referred to by the Examiner, we have

Expected Price = ((N + p)/X) X + (1 - ((N + p)/X)) 0 = N + p

where N + p is the advertised price so the game is fair.

If N + p = 3.5 and X = 5, we have

Expected Price = ((N + p)/X) X + (1 - ((N + p)/X)) 0 = N + p = 3.5.

Similarly, for N + p = 2.5 and X = 5, we have

Expected Price = (2.5/5) 5 = 2.5.

Conclusion

All of the pending claims, i.e., claims 1-23, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

Kevin M. Mason

Date: July 12, 2004

Kevin M. Mason
Attorney for Applicants
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560